S.A...V, I. Ya.

"The Effect of Environmental Factors on the Passage of Various Varieties and Forms of Flax Through Vernalizatio and Illumination Stages." Cand Biol Sci, All-Union Inst of Plant Growing; All-Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin, Leningrad, 1955. (KL, No 12, Mar 55)

So: Sum. No 670, 29 Sept 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

136-8-1/21

AUTHORS: Sharov, I.Ye., Postnikov, N.N.

TITLE: The "Krasnyy Vyborzhets" Works are a Hundred Years Old (Zavodu "Krasnyy Vyborzhets" - sto let)

PERIODICAL: Tsvetnye Metally, 1957, Nr 8, pp.1-11 (USSR)

ABSTRACT: The first September 1957 was the hundredth anniversary of the founding of the copper-rolling factory which was the forerunner of the present "Krasnyy Vyborzhets" works, and the authors describe the growth and improvement of this latter with special reference to post-Revolutionary developments. Photographs of the tube-mill, the 3 000 ton hydraulic press and the six-roll mill with isotope instruments for strip-thickness measurement are shown together with those of the authors (director and chief technologist, respectively of the works) and the following personnel who have distinguished themselves: A.I.Lyagin (Geroy Sotsialisticheskogo Truda), A.S.Podmostkov, V.I.Vanyukov, G.I.Gusev, V.I.Silin, N.N.Kyshov, Yu.M.Triakhov, M.I.Komarov, M.V.Tarasova and D.V.Sorokin. Production data are given showing that the relative values for 1939, 1940, 1946, 1956 and 1957 (planned) were 100, 208, 39, 292 and 303, respectively. There are 15 photographs.

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136-8-1/21

The "Krasnyy Vyborzhets" Works are a Hundred Years Old.
ASSOCIATION. "Krasnyy Vyborzhets" Works (Zavod "Krasnyy Vyborzhets").
AVAILABLE: Library of Congress.

Card 2/2

SOV/136-59-4-11/24

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences, Rytikov, A.M., Sharov, I.Ye., Butomo, D.G., Koshurin, A.V., Sergeyeva, Z.L., Engineers

TITLE: Comparison of the Efficiency of Tube Production from Non-Ferrous Metals and their Alloys by Cold-Rolling and by Drawing Methods (Ekonomicheskaya effektivnost' proizvodstva trub iz tsvetnykh metallov i splavov kholodnoy prokatkoy po sravneniyu s volocheniyem)

PERIODICAL: Tsvetnyye metally, 1959, Nr 4, pp 57-63 (USSR)

ABSTRACT: Opinion was divided on the relative merits of the different methods of tube production, therefore the present investigation was carried out. All sizes of tubes were tried by the two methods. It was shown that output from cold-rolling was 10-25% higher than that from drawing (table 1). The machine-hours and man-hours for cold-rolling were shorter than for drawing (table 2). Table 3 shows the increase in production by cold-rolling with better equipment. By cold-rolling with modern equipment the machine-hours and man-hours could be cut by two in the production of copper tube. The economy in

Card 1/3

Comparison of the Efficiency of Tube Production from Non-Ferrous Metals and their Alloys by Cold-Rolling and by Drawing Methods

this case was 224 roubles per ton and in other cases varied from 165 to 374 roubles per ton. The number of operations in the copper tube production was reduced from 27 to 18. The production of condenser tubes in L68 (brass) alloy has been increased from 70-90 to 180-200 m/hr. An advantage of cold-rolling is that deformation can be up to 94% of the initial section. It also allows the manufacture of tubes from L68 without an intermediate temper, giving a tensile strength of 75-77 kg/mm^2 and an elongation of 2.5-3%. For materials which are difficult to deform (e.g. some Ti alloys) cold-rolling is a superior method of tube production as the machinery is cheaper and the number of operations is reduced. At present, work is in hand for a cold-rolling mill which will produce two or three tubes simultaneously.

SOV/136-59-4-11/24

Comparison of the Efficiency of Tube Production from Non-Ferrous Metals and their Alloys by Cold-Rolling and by Drawing Methods

There are 5 tables and 4 references, 3 of which are Soviet and 1 German.

ASSOCIATIONS: Institut stali; Zavod „Krasnyy Vyborzhets„; Kol'chuginskiy zavod po obrabotke tsvetnykh metallov i splavov (Steel Institute; "Krasnyy Vyborzhets" Works and Kol'chugino Works for Processing of Non-Ferrous Metals and Alloys)

Card 3/3

KONOVALOV, A.N.; SHAROV, K.Ye.

Guarding the safety of rolling stock. Avtom., telem. i sviaz' 8 no.6:1-3 Je '64. (MIRA 17:6)

1. Pomoshchnik dorozhnogo revizora po bezopasnosti dvizheniya poyezdov Moskovskoy dorogi (for Konovalov). 2. Starshiy obshchestvennyy inspektor po bezopasnosti dvizheniya poyezdov Moskovsko-Gor'kovskoy distantsii signalizatsii i svyazi Moskovskoy dorogi (for Sharov).

B/007/62/000/002/008/012
D205/D307

AUTHORS: Mikhaylov, M. and Sharov, L.

TITLE: Synthesis of polyamidoamines

PERIODICAL: Referativnyy byulleten' Bolgarskoy nauchnoy literatury, Khimiya i khimicheskaya tekhnologiya, no. 2, 1962, 8, abstract 111, Khimiya i industriya, 24, 1962, book 1, pp 9-15 (Rus. and Ger. summaries)

TEXT: It was found that the technology of preparing polyamidoamines from linseed oil and aliphatic polyamines may be made better by improving individual stages of the synthesis. Synthesis of polyamides proceeds via the following stages: methanolysis of linseed oil, polymerization of the methyl esters of the aliphatic acids in linseed oil, and polycondensation of the aliphatic polyamines. Separation of crude methyl ester without washing with water after the methanolysis of linseed oil increases the ester yield by 10% and reduces losses of MeOH. During the ester polymerization stage at 315°C, the duration is decreased to 8-9 hours and the yields of

Card 1/2

B/007/62/000/002/003/012
D205/D307

Synthesis of polyamidoamines

dimers and trimers are 56-58%. Polycondensation is carried out with ethylene diamine and diethylene triamine.
[Abstracter's note: Complete translation]

Card 2/2

MIKHAILOV, M.; SHAROV, L.

Epoxy resins modified with oils and fatty acids. Khim i industriia 35 no.1:17-20 '63.

SHAROV, M.A.; BURUNOV, V.Ye.; DIVINSKIY, A.A.; KHARCHENKO, N.P.; CHERKASHIN, A.S.; CHULKOV, A.F.; KOSOROTOV, B.V., red.

[DT-75 tractor] Traktor DT-75. Moskva, Kolos, 1965. 258 p. (MIRA 18:7)

KAYNARSKIY, I.S.; DEGTYAREVA, E.V.; PINDRIK, B. Ye.; KUKHTENKO, V.A.; KULAKOV, N.I.; BEL'CHENKO, B.I.; IVNITSKAYA, N.S.; SMORODA, I.M.; SHAROV, M.F.; KOZIN, L.M.; KVASHA, A.S.; PELESHCHUK, M.I.; PRYAKHIN, L.G.; LEVINA, L.I.; DANILOV, V.I.; DIDENKO, S.Yu. PROTSENKO, G.A.

Reducing dust formation from dinas bricks and dinas mortar. Ogneupory 29 no.3:109-112 '64 (MIRA 17:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Kaynarskiy, Degtyareva, Pindrik, Kukhtenko). 2. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy koksokhimicheskoy promyshlennosti (for Kulakov, Bel'chenko, Ivnitskaya). 3. Vsesoyuznyy trest po stroitel'stvu i montazhu koksokhimicheskikh zavodov (for Peleshchuk, Pryakhin, Levina). 4. Ukrainskiy nauchno-issledovatel'skiy institut gigiyeny truda i professional'nykh zabolevaniy (for Danilov, Didenko, Protsenko).

PAZIN, Grigoriy Mikhaylovich, kand. tekhn. nauk; [illegible], Boris Ivanovich, inzh.; LITAYEV, V.V., inzh., retsenzent; SHLYKOV, M.F., inzh., retsenzent; FOMIN, L.Ya., nauch. red.; VLASOVA, Z.V., red.

[Ship equipment from plastics] Sudovye del'nye veshchi iz plastmass. Leningrad, Sudostroenie, 1965. 239 p. (MIRA 18:3)

KOROBOVA, K.I., SHAROV, M.G.; SHVETS, A.V.

Introducing the manufacture of percale on automatic looms.
Tekst. prom. 24 no.2:32-33 F '64. (MIRA 17:3)

1. Glavnyy inzh. Novo-Tkatskoy fabriki Glukhovskogo khlopchatobumazhnogo kombinata (for Korobova). 2. Zaveduyushchiy tkatskim proizvodstvom Novo-Tkatskoy fabriki Glukhovskogo khlopchatobumazhnogo kombinata (for Sharov). 3. Nachal'nik tkatskogo tsekha Novo-Tkatskoy fabriki Glukhovskogo khlopchatobumazhnogo kombinata (for Shvets).

KYBA[illegible], [illegible]., [illegible]-kapitan 1-go ranga; ZHAKOV, M.F., inzh.-podpolkovnik; [illegible]IY, V.[illegible], inzh. kapitan 3-go ranga

The production of large-scale chemistry for shipbuilding. Mor. sbor. 47 no.4:66-72 Ap '64. (MIRA 18:7)

OSADCHIY, L.K.; SYRKIN, Yu.G., inzh.tekhnolog; VEKSHIN, K.D., mashinist elektrovoza, Geroy Sotsialisticheskogo Truda; ONOPRIYENKO, L.N., mashinist elektrovoza; SHAROV, M.S.; MARKOVICH, I.A., mashinist-instruktor

"Electric networks of the VL23 electric locomotive." Elek. i tepl. tiaga 5 no.6:44-45 Je '61. (MIRA 14:10)

1. Depo Dnepropetrovsk (for Syrkin). 2. Depo Barabinsk Zapadno-Sibirskoy dorogi (for Sharov).
(Electric locomotives)

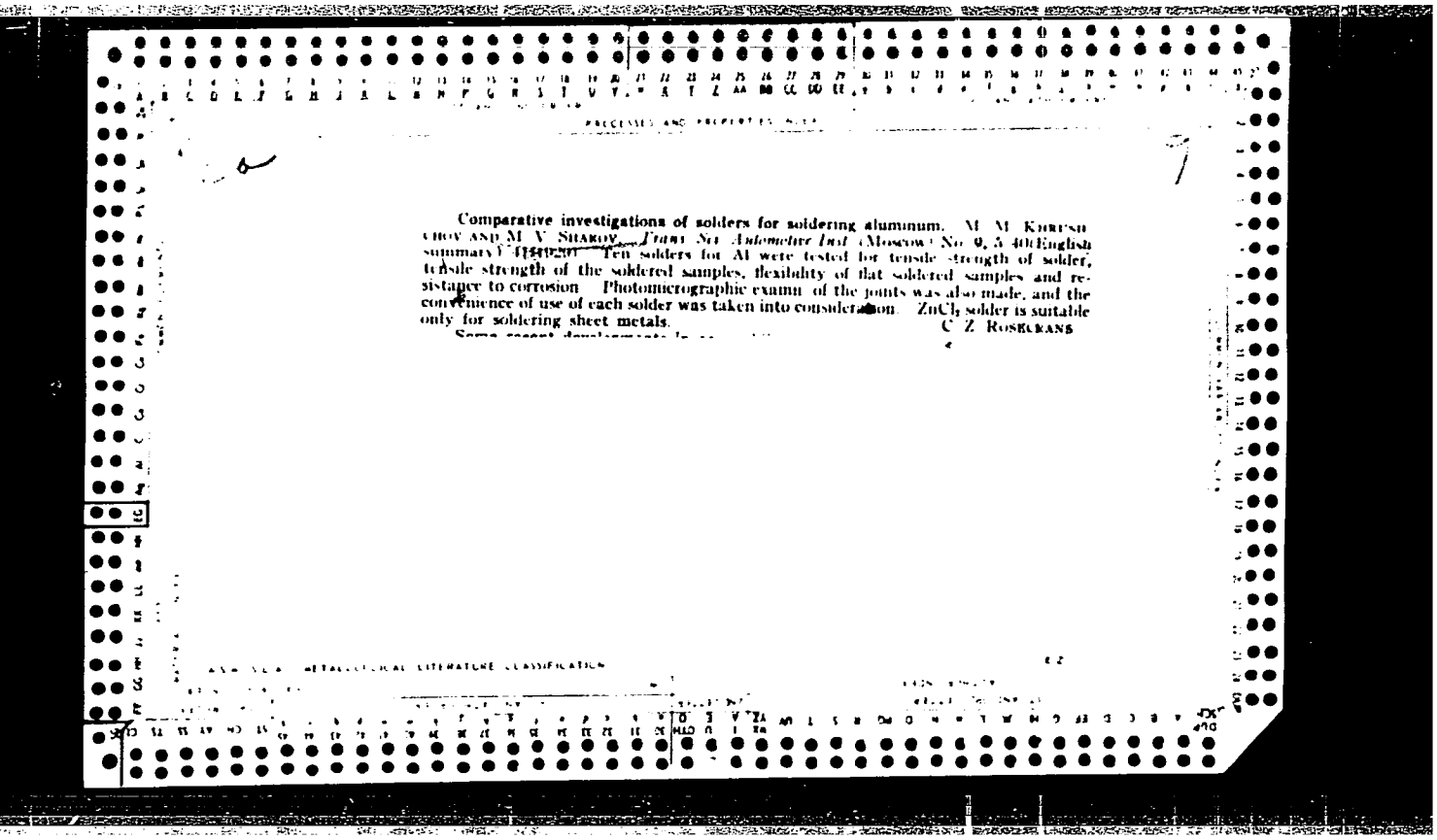
SHAROV, M.S., inzh.

More about the performance of the NB-406 traction engine collectors. Elek.i tepl. tiaga 5 no.12:24-26 D '61. (MIRA 15:1)
(Electric locomotives)

SHAROV, M.S. (Barabinsk)

Organization of the work of locomotive shift crews. Zhel.dor. transp. 43 no.5:57-60 My '61. (MIRA 14:4)

1. Glavnyy inzhener depo Barabinsk.
(Railroads—Employees)



Comparative investigations of solders for soldering aluminum. M M Kirrsn chov and M V Sharov. *Trans Sci Automotive Inst* (Moscow) No 9, 5 40(English summary) (1940) Ten solders for Al were tested for tensile strength of solder, tensile strength of the soldered samples, flexibility of flat soldered samples and resistance to corrosion Photomicrographic examn of the joints was also made, and the convenience of use of each solder was taken into consideration $ZnCl_2$ solder is suitable only for soldering sheet metals.
C Z Rosekrans

SHARKOV, M. V.; KULCHENKO, A. P.; STEPANOV, M. G.

"Several Methods of Processing Electron (Magnesium) Alloys in the Liquid State," "Trudy Moskovskogo Aviatsionnogo Tekhnologicheskogo Instituta" (Proceedings of the Moscow Aviation Inst. of Technol.), Issue No. 4, pp. 3-29, 1948.

SHARCV, M. V.

"On the Treatment of Magnesium Alloys in a Liquid State." Sub 24 Apr 51, Moscow Aviation Technological Inst

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

USSR/... Alls - Aluminum, Alloys, Casting Sep 51

"On Treatment of Aluminum-Magnesium Alloys in Liquid State," M. F. Odina, Engr, Docent M. V. Sharov, Cand Tech Sci, Moscow Avn Technol Inst

"Litey Proiz" No 9, pp 18-27

Assuming that introduction of hydride-forming elements into Al-Mg alloys may serve as effective measure against porosity in castings, suggests treatment of molten metal with salts of Zr. Effectiveness of process is similar to action of Cl. Observed considerable decrease of grain size and improvement in mech properties of Al-base alloy Al-8

PA 197T87

1. SHAROV, M. V. ; NIKITINA, M. F.

2. USSR (600)

4. Aluminum Founding

7. Treating AL8 alloy with zircon salts, Lit. proiz., No. 10, 1952.

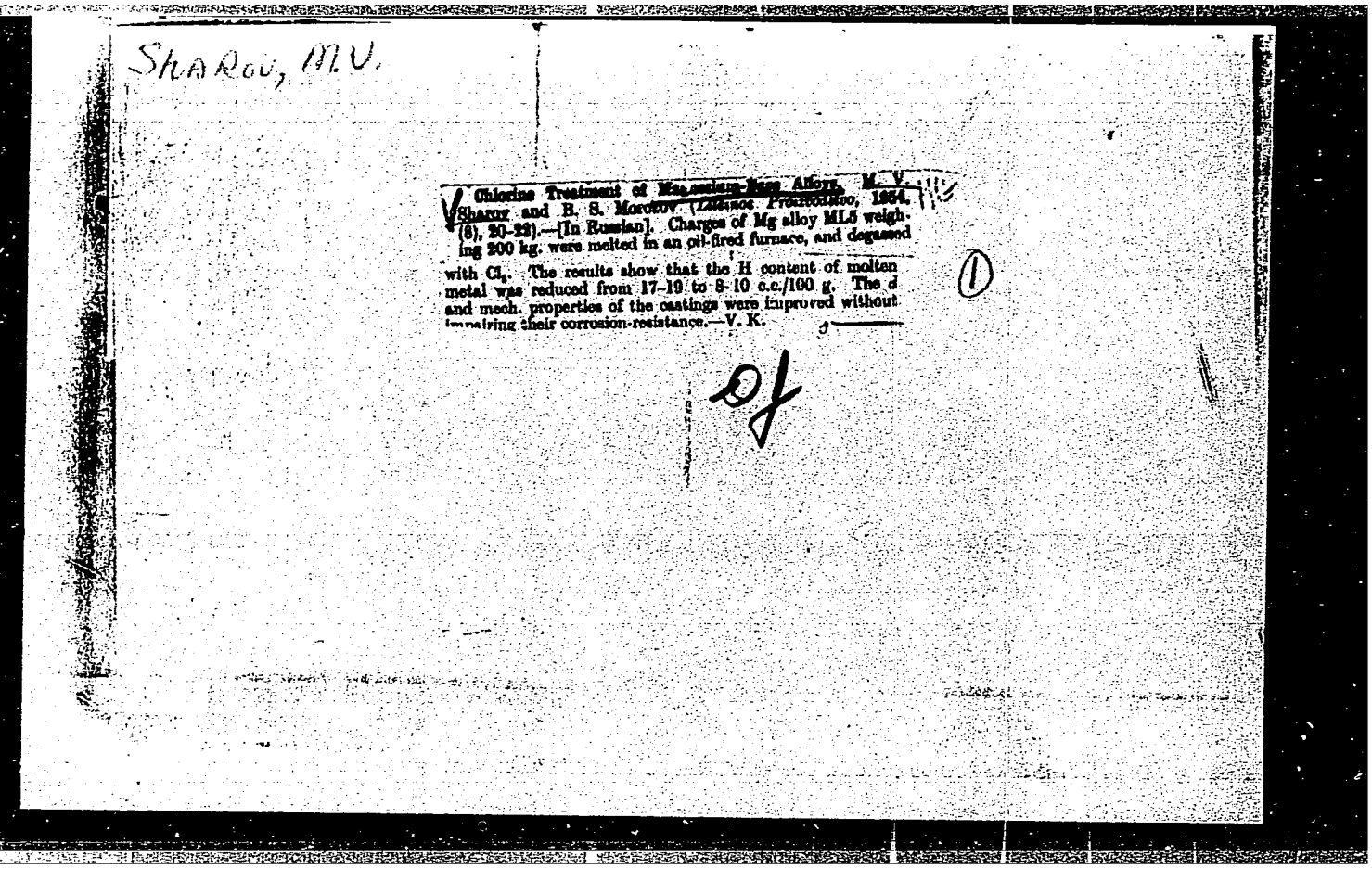
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

SHAROV, M. V.

(3)

Gaseous porosity of magnesium-alloy coatings. M. V. Sharov, B. S. Morozov, and V. M. Pletenev. *Liteinoe Proizvodstvo* 1953, No. 6, 16–19.—Cavities found in Mg-alloy castings and usually attributed to shrinkage phenomena are probably caused by H evolving on solidification. In a series of expts., 0.05–0.30% H was introduced in the molten bath of Mg alloys through adding carnotite flux contg. 10% H, samples were analyzed for the gas after solidification, and the castings were studied by the x-ray technique. Higher H concn. lead to increased porosity. The degree of porosity was divided into 11 groups and then compared with porosity found in plant products. Identicity of porosity was established. The effect of H on tensile strength and elongation begins to be felt with H_2 concn. of 18 cc./100 g. and is directly proportional to the extent of porosity.

J. D. Gat



Sharov, M.V.

Chlorine Treatment of Magnesium-Base Alloys. M. V. Sharov and B. S. Morozov (Liteinoe Proizvodstvo, 1954, (8), 20-22).—[In Russian]. Charges of Mg alloy ML5 weighing 200 kg. were melted in an oil-fired furnace, and degassed with Cl_2. The results show that the H content of molten metal was reduced from 17–19 to 8–10 c.c./100 g. The d and mech. properties of the castings were improved without impairing their corrosion-resistance.—V. K.

(1)

of

137-58-4-6871

Translation from Referativnyy zhurnal. Metallurgiya. 1958 Nr 4 p 79 (USSR)

AUTHORS. Sharov, M.V., Gudchenko, A.P.

TITLE A Study of the Reaction Between Hydrogen and Light Alloys During the Process of Fusion (Izucheniye vzaimodeystviya vodoroda s legkimi splavami v protsesse plavleniya)

PERIODICAL V sb. Metallurg. osnovy lit'ya legkikh splavov. Moscow Oborongiz. 1957, pp 306-340

ABSTRACT. The authors develop a method of determining H in liquid alloys of Al, also in Mg and Mg alloys and certain alloying elements (the method is applicable both to solid metals and alloys to melts), for the purpose of studying certain questions of the change in the H content of light alloys during smelting and working in the liquid state, and to study the effect of the conditions of melting upon the process of gas absorption. The H content in Mg and Mg alloys in accordance with treatment in the liquid state was determined, as was the content of H in charge materials (ingot Al, Silumin and Mg alloying element). Also studied were the changes in H content of molten Al alloys relative to their composition and the duration of their maintenance in the

Card 1/2

A Study of the Reaction (cont.)

molten state, the effect of Mg additives on the rate of change in H content during the holding of molten Al-Si alloy, and the changes in the H content when Al-Si alloys containing small amounts of added Na, Ca, and Ce were allowed to stand. The changes in H content in Al alloys held in the molten state at various degrees of atmospheric humidity, also the changes in the H content of Al-Si alloy when treated with fluxes, were studied.

N. P.

1. Aluminum alloys--Hydrogen--Reaction 2. Magnesium alloys--Hydrogen --Reaction 3 Manganese alloys--Hdyrogen--Reaction

Card 2/2

137-1958-2-2691

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 2, p 71 (USSR)

AUTHORS. Sharov, M.V., Morozov, B.S., Serebryakov, V.V.

TITLE Degassing Magnesium Alloys With Argon (Degazatsiya magniyevykh splavov argonom)

PERIODICAL V sb. Metallurg osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 341-359

ABSTRACT A study was made to ascertain methods and conditions of degassing the ML 5 alloy (an aircraft magnesium alloy) that would assure a steady yield of sound castings. The degassing properties of Ar were tested on this alloy. A molten ML 5 alloy containing 15-19 cm^3/100 g of H was subjected to degassing by Ar. The heats occurred in a Fe crucible in an electric shaft furnace. The weight of the charge was 6-7 kg (of the alloy). The alloy was wet-fluxed at 750-760°. The Ar was blown through the molten metal, which had been heated to 750-760°. A study was made of the modifying action of CCl_4. The optimum conditions for combined treatment of ML 5 (i.e., degassing with Ar and modification with CCl_4) proved to be 0 5 percent Ar and 0.4 percent CCl_4 at 750-760° -- which assured sound castings with good mechanical properties.

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137-1958-2-2691

Degassing Magnesium Alloys with Argon

The combined treatment of the melt (which degassed, modified, and refined the ML 5 alloy) made it possible to combine the three operations into one. These methods for degassing alloy ML 5 are economical and do not require the use of materials that are costly or not readily available. It was further established that blowing Ar through the alloy, then modifying it with magnesite (a consecutive treatment), assured casts of a fine crystalline grain and consistent mechanical properties. Neither the combined treatment nor the one following it affected adversely the corrosion resistance of the alloy.

O.B.

1. Magnesium alloys--Degassing 2. Argon--Applications

Card 2/2

FRIDLYANDER, I.N., kand.tekhn.nauk, otvetstvennyy red.; PETROV, D.A., doktor tekhn.nauk, prof., red.; BELOV, A.F., red.; DRITS, M.Ye., kand. tekhn.nauk, red.; LIVANOV, V.A., kand.tekhn.nauk, red.; SHAROV, M.V., kand.tekhn.nauk, red.; KORNEYEV, N.I., doktor tekhn.nauk, prof., red.; RZHEZNIKOV, V.S., red. izd-va; CHERNOV, A.N., red. izd-va.

[Light alloys] Legkie splavy. Moskva, Izd-vo Akad. nauk SSSR. No.1. [Physical metallurgy, heat treatment, founding, and use of pressure] Metallovedenie, termicheskaia obrabotka, lit'e i obrabotka davleniem. 1958. 497 p. (MIRA 11:6)

1. Vsesoyuznaya konferentsiya po legkim splavam. 2d, 1955. (Alloys)

SOV/137-58-12-24345

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 58 (USSR)

AUTHOR: Sharov, M. V.

TITLE: Hydrogen in Light Alloys and Measures for Combatting the Formation of Gas Pockets in Castings (Vodorod v legkikh splavakh i meropriyatiya po bor'be s obrazovaniyem gazovoy poristosti v otlivkakh)

PERIODICAL: V sb.: Legkiye splavy. Nr 1, Moscow, 1958, pp 365-388

ABSTRACT: The physicochemical conditions descriptive of equilibrium solubility of H_2 in Mg and Al alloys, the possibility of formation of supersaturated solutions, and a method for the fast determination of H_2 in alloys are examined. The possibility that gas will be liberated owing to the high H_2 contents of primary metals (Me) and alloys is noted. A number of methods for combatting the liberation of gas is examined: As a preventive measure, arrangements providing minimum contact of Me and H_2; degasifying by blowing with gases or processing with fluxes, and methods to prevent liberation of gas, such as crystallization under pressure and the addition of hydride-forming Me's. The results of investigations into the use of Cl_2, He, and Ar to assure the production of solid castings in the making of shaped Mg alloy

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castings without impairing the other properties of the casting are presented. Fluxing is recommended for the casting of ingots when reverberatory furnaces are used for the melts. With Al alloys it is desirable to use K fluo[illegible] which yields a solid casting and fine crystallization of the grains. Crystallization under pressure and the addition of hydride-forming Me s is recommended for the casting of shapes. Specifically, addition of 0.1-0.2% Ca is recommended for Mg alloys.

L P.

AUTHORS: Sharov, M. V., Serebryakov, V. V.

TITLE: The Solubility of Hydrogen in Magnesium Alloys (Rastvorimost' vodoroda v magniyevykh splavakh) SOV/163-58-2-6/46

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 2, pp. 37-42 (USSR)

ABSTRACT: The conditions of the formation of porosity as dependent on the change of the solubility of hydrogen in magnesium alloys was investigated. To determine the hydrogen content in magnesium alloys the method of hot vacuum extraction was employed. Numerous determinations explain the change of the solubility as dependant on the composition of the alloys and on the temperature. In solid metals the solubility of hydrogen at melting temperature amounts to 19 $cm^3/100g$. After melting the solubility of hydrogen increases to 51 $cm^3/100g$. The change of the equilibrium solubility of hydrogen in magnesium - aluminum alloys was investigated at temperatures of 20, 750, 800°C as well as at the solidus and liquidus temperature under normal pressure. An intense change of the solubility with an increase in temperature at normal pressure even occurs in alloys in liquid state. From

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The Solubility of Hydrogen in Magnesium Alloys

the course of the isothermal lines may be seen that the solubility of hydrogen in magnesium - aluminum alloys with an aluminum content of 6% is high. A further increase of the aluminum content leads to a considerable decrease of the solubility in liquid alloys. The solubility of hydrogen in magnesium-zinc alloys as dependent on the temperature was investigated and it was shown that the solubility curves take a similar course as the curves of the magnesium - aluminum alloys. When the zinc content is increased a higher decrease of the solubility occurs than is the case in magnesium - aluminum alloys. The results obtained point out that the solubility of hydrogen in magnesium alloys is in relation to the porosity of these alloys. Magnesium alloys with a zinc content of 6% tend less to form pores than do those with higher zinc content. Magnesium alloys with 6% aluminum tend more to form pores than do alloys with 3% and 9% aluminum. Ternary alloys have a greater tendency to pore formation than binary systems. There are 4 figures, 1 table, and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation Technological Institute)

AUTHORS: Sharov, M. V., Serebryakov, V. V. SOV/163-58-3-5/49

TITLE: The Formation of Oversaturated Solutions of Gas in Metals (Obrazovaniye peresyshchennykh rastvorov gaza v metallakh)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 25 - 31 (USSR)

ABSTRACT: By the change of the composition of the alloy a change of the solubility of hydrogen as well as a change of the rate of diffusion processes occur. The experiments carried out demonstrate that at a certain rate of cooling the hydrogen dissolved remains in the liquid metal also when the melt solidifies. The dependence of the residual amount of hydrogen in the solid phase on the cooling rate was investigated. By means of the results obtained curves were plotted which demonstrate that the hydrogen content of the alloys depends on the cooling rate, as does the gas separation in the crystallization of the metal melt. Alloys with an aluminum content exhibit a smaller oversaturation with hydrogen. By adding aluminum and magnesium the diffusion process is accelerated and the formation

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of oversaturated solutions is prevented. A comparison made between rapidly cooled alloys with 3% and 6% aluminum showed that the alloys with 3% aluminum have a greater tendency to form oversaturated solid solutions with gas. In the case of a slow cooling for the purpose of separating gas and forming gas porosity a previous degassing by means of chlorine, argon, helium or by the addition of calcium to the alloys is necessary. There are 5 figures, 1 table, and 5 references, which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Technological Institute of Aircraft Construction)

SUBMITTED: December 10, 1957

16(4)

AUTHORS: Sharov, M. V., Bibikov, Ye. L. SOV/163-58-4-17/47

TITLE: Porosity in Magnesium Alloys (Poristost' v magniyevykh splavakh)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4, pp 101 - 107 (USSR)

ABSTRACT: Work was carried out by the aspirant Y .L.Bibikov under the scientific direction of M.V.Sharov, University Docent, Candidate of Technical Sciences. Magnesium-aluminum alloys with an aluminum content of 0, 3, 6 and 10% were examined. Two series of experiments were made: 1)After preparation, all alloys were degased by chlorine leaving only about 8 cm^3 hydrogen per 100 g of metal. 2) The alloys were artificially saturated with hydrogen. The hydrogen content was increased up to 20 cm^3/100 g of metal. The formation of porosity was investigated at relatively quick cooling and at relatively slow cooling. On the strength of the tests made, the following was

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Conclusions: 1) There are two forms of porosity development: a) "Wheelers" porosity, b) Porosity by gas contraction. 2) Porosity may show one of the forms mentioned with different degrees of development depending on the influence of three main factors: a) the degree of development of the volume crystallization, b) the intensity of gas liberation during crystallization, c) the speed at which the solid phase forming during crystallization is shifted. These factors may act in different combinations and with different intensity. The less the temperature gradient during crystallization of the cast piece and the greater the temperature of crystallization, the more the volume crystallization develops. Intensity of gas liberation depends on the quantity of gas liberated at an equilibrium during crystallization, and on the ability of the alloy to form oversaturated gas solutions in the metal with different degrees of oversaturation depending on cooling velocity. A shifting of the solid phase may occur if the specific weight of the

solid phase is higher than that of the liquid phase. 3) "Wedge" porosity forms due to a shift of the liquid alloy from top to bottom within the crystalline nucleus. The development of volume crystallization promotes the formation of the nucleus. A greater shift of the solid phase leads to a reduced formation of "nuclear" porosity. 4) Porosity by gas contraction forms when gas is liberated during the hardening of the alloy. This kind of porosity cannot occur if hardening is frontal. There are 3 figures and 1 Soviet reference.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation Technological Institute)

SUBMITTED: November 20, 1957

Card 3/3

AUTHORS: Sharov, M. V., Serebryakov, V. V. SOV/32-24-1o-21/7o

TITLE: A Method for the Determination of the Solubility of Hydrogen in Magnesium and Its Alloys (Metodika opredeleniya rastvorimosti vodoroda v magnii i yego splavakh)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 1o, pp 1226 - 1228 (USSR)

ABSTRACT: The solubility of hydrogen in metals and alloys is usually determined according to the absorption method (Ref 1). This method, however, is not applicable in the case of magnesium and its alloys as magnesium exhibits too high a vapor pressure at high temperatures. For this reason the melted metal or the alloy is saturated with hydrogen and then the hydrogen content of a sample is determined (Refs 2-4). Winterchager (Vinterkhager) (Ref 2) took out the sample according to the method of "hardening". According to Ransley (Rensley) (Ref 5), however, on the occasion of crystallisation of the metal saturated with hydrogen not all the hydrogen always remains in the solid solution.

Card 1/3

A Method for the Determination of the Solubility of Hydrogen in Magnesium and Its Alloys SOV/32-24-10-21/70

The imperfection of the device for the saturation of the melt with hydrogen is mentioned as an essential deficiency in the work carried out before. A device is described which makes it possible to maintain a hydrogen pressure of 1 atmosphere above the metal melt. The device is shown in a figure. In the description it is mentioned that for the determination of the hydrogen content of the samples the method by A.P. Gudchenko (Refs. 6,7) was used. Comparative experiments according to the method of extraction were also made; the results (given in a table) for the main part differ for only by 5% at most. There are 3 figures, 1 table, and 7 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation-Technological Institute)

A Method for the Determination of the Solubility of Hydrogen in Magnesium and Its Alloys SOV/32-24-10-21/70

Card 3/3

SOKOL'SKAYA, Lidiya Iosifovna; KRYMOV, V.V., kand.tekhn.nauk, nauchnyy red.; SHAROV, M.V., kand.tekhn.nauk, retsenzent; KHYSIN, B.T., inzh., retsenzent; EL'KIND, L.M., red.izd-va; KARASEV, A.I., tekhn.red.

[Gases in light metals] Gazy v legkikh metallakh. Pod nauchnoi red. V.V.Krymova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 114 p. (MIRA 12:6)
(Gases in metals)

SHAROV M. V.
P. 2

PHASE I BOOK EXPLOITATION SOV/3505

Spravochnik po mashinostroitel'nym materialam v chetyrekh tomakh, tom 2: Tsvetnyye metally i ikh splavy (Handbook on Machine-Building Materials in 4 volumes, v. 2: Nonferrous Metals and Alloys) Moscow, Mashgiz, 1959. 639 p. Errata slip inserted. 25,000 copies printed.

Ed.: G. I. Pogodin-Alekseyev, Doctor of Technical Sciences, Professor; Ed. of this vol.: M. A. Bochvar, Engineer; Ed. of Publishing House: V. I. Rybakova, Engineer; Managing Ed. for Information Literature: I. M. Monastyrskiy, Engineer; Tech. Eds.: T. F. Sokolova and B. I. Model'.

PURPOSE: This book is intended for machine designers and metallurgists.

COVERAGE: The book presents comprehensive tabular and textual data on the chemical composition, physical and mechanical properties, microstructure, heat treatment, applications, etc., of various nonferrous metals and alloys used in machinery manufacture. Metals dealt with are aluminum, magnesium, copper, nickel, cobalt, titanium, zinc, and cadmium, together with certain precious and rare metals. Special materials considered are hard alloys (including sintered carbides), cermets, and ply metals. Special alloys, such as bearing, . . .

Card 1/22

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548620014-0"

18(4)

AUTHORS: Sharov, M. V., Nikishayeva, O. I. SOV/163-59-1-13/50

TITLE: Degassing of Aluminum-Silicon Melts With the Help of Fluxing Agents (Degazatsiya alyuminiyevokremniyevykh splavov pri pomoshchi flyusov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 58-62 (USSR)

ABSTRACT: This is an examination of the opportunities of using degassing fluxing agents in pot furnaces and in radiation furnaces intended for the melting of cast iron alloys. The results were also checked under operation conditions. The experiments were conducted with the alloy AL-10V, which is widely used in piston production. At the beginning of each experiment hydrogen at a rate of 0.8 - 0.9 $cm^3/100$ g was introduced into the melt. The hydrogen content was measured with an instrument developed by A. P. Gudchenko. Three fluxing agents were investigated: Nr 1, with 47% of KCl + 30% of NaCl + 23% of Na_3AlF_6, Nr 2, with 50% of KCl + 40% of NaCl + 7% of Na_3AlF_6 + 3% NaF, and Nr 3 with K_2ZrF_6. The method applied in the experiments and that applied in the tests on a production

Card 1/3

scale are described. The experiments lead to the following conclusions: 1) If the alloy AL-10V in a liquid state is treated with the fluxing agents in question degassing proceeds to a sufficient degree if the melting is done in pot furnaces. The fluxing agents Nr 1 or 2 are added in a quantity of 0.2% of the alloy weight. The total time required for the treatment with the fluxing agents depends on the depth of the bath and is 2-3 hours on the average. 2) For the production of steel free from blowholes a treatment of the melt with potassium fluozirconate is very effective. The treatment can be limited to a time of 5-7 minutes. 3) If the metal is melted in radiation furnaces with continuous charging, the use of the fluxing agents Nr 1 and 2 leads to a reduction of the hydrogen content in the melt. This reduction is but smaller than if melting is done in pot furnaces. 4) A treatment of the melt with potassium fluozirconate reduces the gas content of the melt by a factor of 2. If degassing is carried out with potassium fluozirconate this salt is added in a quantity of 0.4-0.5% of the melt weight and is kept at the surface of the bath for 10 - 15 minutes at 730-780°.

Degassing of Aluminum-Silicon Melts With the Help of Fluxing Agents SOV/163-59-1-13/50

Afterwards the melt is mixed through. In this case the fluxing agents Nr 1 and 3 are used as a blanket which must be replaced at least every hour. There are 2 figures, 2 tables, and 1 Soviet reference.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation Technology Institute)

SUBMITTED: December 10, 1957

Card 3/3

18(4)

AUTHORS: Sharov, M. V., Bibikov, Ye. L. SOV/163-59-1-14/50

TITLE: Tendency of the Alloys of the System Mg-Al-Zn Toward Porosity Development (Sklonnost' splavov sistemy Mg-Al-Zn k razvitiyu poristosti)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 63-67 (USSR)

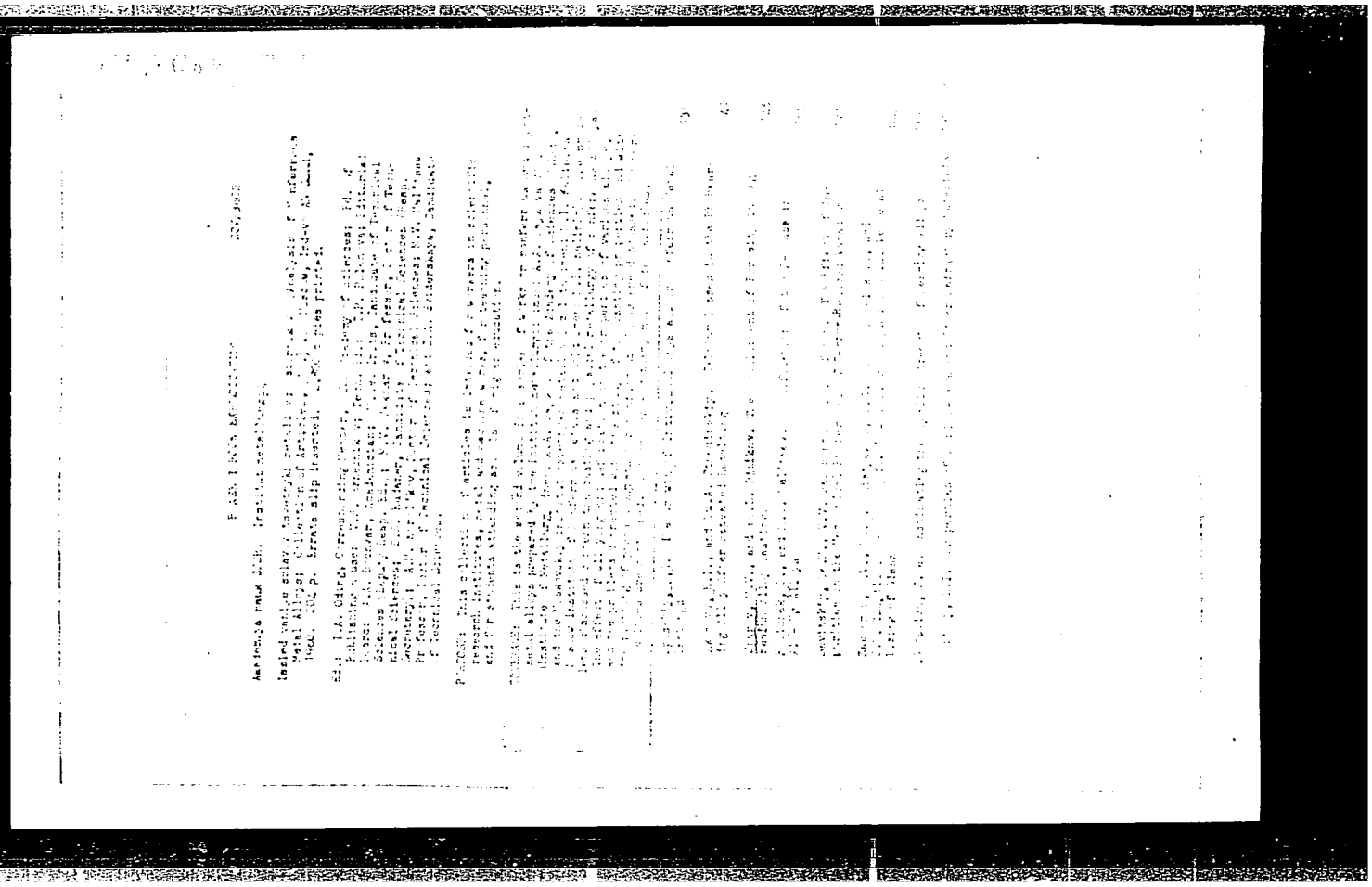
ABSTRACT: This is a comparative study of the tendency of this system to develop micro-pores. Its dependence upon the composition of the alloy, the hydrogen content in the melt and the thermal conditions during the cooling of the cast are investigated. The procedure adopted in the experiments is described first. The following alloys were produced in an electric furnace: 1) Magnesium-aluminum alloys, with an aluminum content varying from zero to 10%. 2) Magnesium-zinc alloys with a zinc content varying from zero to 6% and 3) Magnesium-aluminum-zinc alloys, the aluminum content and the zinc content of which did not exceed 10% and 6%, respectively. The conditions during freezing were investigated. In conclusion the following is stated: The diagrams presented in this paper provide a means of determining the tendency of Mg-Al-Zn alloys to

develop porosity as a function of the alloy composition and the technological conditions during casting. The influence of the latter can easily be determined from formula (2). The hydrogen dissolved in the metal exercises a decisive influence upon the development of porosity during casting, if $K<0.4$, where K denotes a critical number determining the character of freezing, being proportional to $\frac{\Delta t}{I_t}$, Δt denoting the temperature gradient in the cross-section of the cast, and I the temperature interval of crystallization of the melt (both given in ^{o}C). Among the alloys used in industry that with an aluminium content of 9% and a zinc content of 2% proved to be the worst, at a value of $K \geqslant 0.4$, whereas the Ml-5 alloy and the magnesium alloy with 5% of zinc are rather good. If freezing proceeds at a value of $K<0.4$ the Ml-5 alloy does not show any tendency towards porosity at a low hydrogen content. If, however, the hydrogen content rises above 20 $cm^3/100$ g of metal this alloy turns out to be the worst. It is, therefore, necessary to use melts with a low hydrogen

content in order to obtain high-quality casts. Under cooling conditions characterized by $K < 0.4$ the alloy Ml-4 is the worst. There are 2 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation Technology Institute)

SUBMITTED: January 23, 1958



PHASE I BOOK EXPLOITATION SOV/4343

Soveshchaniye po teorii liteynykh protsessov, 3d

Usadochnyye protsessy v metallakh; trudy soveshchaniya (Shrinkage Processes in Metals; Transactions of the Third Conference on the Theory of Casting Processes) Moscow, AN SSSR, 1960. 281 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: B.B. Gulyayev, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V.S. Rzheznikov; Tech. Ed.: T.V. Polyakova.

PURPOSE: This collection of articles is intended for scientific workers, engineers, technicians of scientific research institutes and industrial plants, and for faculty members of schools of higher education.

COVERAGE: The collection contains technical papers presented at the Third Conference on the Theory of Casting Processes, organized by Liteynaya sektsiya Komissii po tekhnologii mashinostroyeniya Instituta mashinovedeniya AN SSSR (Casting Section of the Commission for Machine-Building Technology of the Institute of Science of Machines, Academy of Sciences USSR) and by Institut metallurgii imeni A.A. Baykova AN SSSR (Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR). The most serious defects in castings, ingots, and welds as a result of metal shrinkage are reviewed. Factors contributing to the formation of shrinkage cavities, porosity, cracks, fissures, distortion, and internal stresses are analyzed along with measures taken to prevent and remedy them. The hydrodynamics of molten metals and the process of solidification of metals are discussed. Also presented are resolutions adopted at the Conference with regard to the problem of shrinkage in metals. No personalities are mentioned. Most papers are accompanied by bibliographic references, the majority of which are Soviet.

TABLE OF CONTENTS:

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SHAROV, M.V.; BIBIKOV, Ye.L.

Porosity formation in magnesium alloy castings. Issl.splav. tsvet.met. no.2:145-164 '60. (MIRA 13:5)
(Magnesium founding)

25835

18 3000A 2508 only 1087

S/536/61/000/049/003/003
E021/E435

AUTHORS: Sharov, M.V., Candidate of Technical Sciences
Nikishayeva, O.I.

TITLE: Degassing of aluminium alloys by hexachlorethane

PERIODICAL: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy. No.49, 1961, pp.47-72. Voprosy tekhnologii liteynogo proizvodstva

TEXT: The disadvantages of using chlorine and chlorides for degassing aluminium melts are discussed and the use is recommended of hexachlorethane which is readily available and inexpensive in relation to manganese chloride. Experiments on the degassing ability of hexachlorethane have been carried out on alloys АЛ2 (AL2) and АЛ9 (AL9). Melts of 5.5 kg were prepared in a graphite crucible Gas contents were measured by the method due to A.P.Gudchenko (M.V.Sharov, A.P.Gudchenko, Fundamental metallurgy of light alloys, p.306, Collection of Papers, Oborongiz, 1957). The hydrogen content before degassing was 0.75 to 0.9 cm^3/100 g metal, This was obtained by addition of moist asbestos wads. Samples 50 mm in diameter were cast and plates 3 mm thick were cut from them for radiographic examination. Experiments on AL2 alloy were

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Degassing of aluminium alloys ...

carried out at 700 to 710°C. Fig.3 shows the change in hydrogen content (H_2 in $cm^3/100$ g of metal) with increase in quantity of hexachlorethane (%), the analysis being carried out 10 to 15 min after degassing. Radiographic investigations showed that sound castings were obtained with 0.2 to 0.25% hexachlorethane. Experiments showed also that sound sand-castings of modified AL2 alloy could also be obtained if the alloy was first degassed. It was shown that temperature, in the range 700 to 750°C, had no effect on the soundness of AL2 castings. Table 2 shows the effect of degassing time on the hydrogen content by adding a number of portions of hexachlorethane over a period of time using a constant total amount. The best results were obtained when each portion was less than 25 to 30% of the total added. Table 3 shows that hexachlorethane is a more efficient degassing agent than manganese chloride. Radiographs of AL2 alloy after degassing with 0.1% hexachlorethane, or with 0.1% manganese chloride, are reproduced in the paper. Degassing of AL2 alloy was tried under production conditions. It was shown that degassing by hexachlorethane was advantageous both from porosity checks and tests of mechanical properties. Experiments on AL9 alloy showed that the

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E021/E435

Degassing of aluminium alloys ...

hydrogen content (in $cm^3/100$ g metal) decreased with increase in addition of hexachlorethane (%), Fig.7. To produce sound castings 0.7 to 0.75% hexachlorethane was required. Table 6 shows the effect of increasing the degassing time by increasing the number of portions added, using the same total quantity of degassing agent. The best results were obtained when each portion was less than 20% of the total amount. Table 7 shows that for AL9 alloy, with increase in melt temperature there is a decrease in hydrogen content. Experiments on modified AL9 alloy showed that it was practically impossible to obtain sound castings. Tests under production conditions showed that a lower porosity and higher mechanical properties were obtained when hexachlorethane was used as a degassing agent for AL9 alloys. Acknowledgments are expressed to Ye.L.Bibikov, B.A.Tikhomirov and N.M.Galdin for assistance in tests. M.F.Nikitina is mentioned in the paper for her contribution in the field. There are 11 figures, 12 tables and 11 references: 9 Soviet and 2 non-Soviet. The two references to English language publications read as follows:
W.Mannchen, W.Fisher, Metal, 1953, No.6.
Herrman, Aluminium archiv, 1937, No.6.
Card 3/10

[redacted], [redacted], [redacted]

"[redacted] of the Temperature of the Mould or the Formation and Porosity in Castings of Magnesium Alloys"

Report presented at the 7th Conference on the International of the Casting World and the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. [redacted], [redacted] January 1961.

SHAROV, M.V., kand.tekhn.nauk; NIKISHAYEVA, O.I.

Gas removal from aluminum-silicon alloys by means of hexachlorethane. Trudy MATI no. 49:47-72 '61. (MIRA 14:5)
(Aluminum-silicon alloys--Metallography) (Gases in metals)

SHAROV, M.V., kand.tekhn.nauk; SEREBRYAKOV, V.V., kand.tekhn.nauk

Hydrogen in the ML5 alloy. Trudy MATI no. 49:170-179 '61.
(MIRA 14:5)
(Magnesium alloys--Hydrogen content)

S/840/62/000/000/002/003
E021/E435

AUTHORS: Sharov, M.V., Bibikov, Ye.L.

TITLE: The influence of the intensity of cooling and other factors on the formation of porosity magnesium alloy castings

SOURCE: Vzaimodeystviye liteynoy formy i otlivki. Inst. mashinoved. AN SSSR. Ed. by B.B.Gulyayev. Moscow, Izd-vo AN SSSR, 1963, 269-277

TEXT: Magnesium-zinc alloys with up to 10% aluminium and 6% zinc were cast into moulds pre-heated to 50,200,350 and 500°C. The drop in temperature from top to bottom of a casting during solidification was much less for the moulds pre-heated to 350 or 500°C than for those heated to 50 and 200°C (2 to 20°C and 79 to 112°C respectively). The solidification time increased and the rate of cooling decreased with increase in mould temperature. Radiographs showed that all castings cooled at a rate of more than 15 to 20 °/min (mould temperatures 50 and 200°C) had porosity in the upper regions. Increasing the hydrogen content from 8 to 22 cm3/100 g metal had no effect on porosity. The depth of porosity increased with

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Card 2/2

S/806/62/000/003/013/01[illegible]

AUTHORS: Sharov, M.V., Nikishayeva, O.I.

TITLE: Modern methods for the elimination of gaseous porosity in aluminum-silicon-alloy castings.

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniye splavov tsvetnykh metallov. no.3, 1962, 149-162.

TEXT: The paper describes an investigation of the diffusional elimination of H from a melt, the degassing by means of special fluxes (a relatively slow process), and the more effective degassing of Al alloys by means of blowing gases (Cl, N, Ar, or He) through the melt. Of the latter, Cl is the most effective but is little used because of its toxicity. Chlorides (of Mn, Zn, and Al) are effective and nontoxic, but are highly hygroscopic and, hence, require prolonged drying and protection during storage. Hexachloroethane (carbon trichloride (C_2Cl_6)) appears to be effective and nonhygroscopic. At melt temperature the following reaction appears to occur: $3C_2Cl_6 + 2Al = 2C_2Cl_4 + 2AlCl_3$. Both the tetrachloroethylene and the $AlCl_3$ remain in vapor form and participate in the degassing process. The losses in Al are relatively small. The C_2Cl_6 does not require preliminary dehydration, nor does it require any special protection in storage, and is readily and inexpensively available. Comparisons with $MnCl_2$ are given in each instance. Tests were made with the Al-Si alloys AA 2 (AL2), AL 4, and AL9 in graphite crucibles (mean charge: 5.5 kg). The initial H content was near the maximum observed in industrial conditions.

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After degassing, the alloys were inoculated variously as described in the text and were cast at 720°C into sand molds and into preheated (250°) metal molds. In either instance the crystallization required about 13 minutes. X-ray transillumination and specific-gravity and porosity determination were performed on 3-mm thick specimens. It was found that AL2 and AL9 could be successfully degassed with hexachloroethane (HCE). Laboratory tests and industrial verification tests show that compact castings of inoculated alloy can be obtained regardless of the mold employed. HCE treatment of AL2 is more effective and more economical in comparison with chloride treatment, and more especially $MnCl_2$. HCE treatment of AL2 ensures a very low H content in the melt and the production of compact castings in metal molds. AL9 requires more HCE to achieve a prescribed degree of degassing, and a higher degree of degassing to achieve a prescribed degree of compactness than AL2. When cast into sand molds, AL9 does reacquire some porosity by interaction with the moisture of the mold, but to a substantially smaller degree than upon degassing by $MnCl_2$. The investigations comprised tests on the effect of (1) the total time of HCE used, (2) the treatment T, and (3) the treatment time, on the intensity of degassing achieved. The treatment T does not appear to affect the treatment of AL2 appreciably but does effect a reduction in H content with increasing T in AL9, with a minimal value attained at T=740-750°C. Mechanical tests indicated increases in strength upon degassing. There are 4 figs., 9 tables, and 12 refs. (8 Russ.-lang. Sov., 2 Ger., & 2 Eng.-lang.-Francis, J. L., Rogers, S. J., Brit.Foryman, Dec.1959, 529, and

Card 2/2 (Assn: None given.) /Kellogg, H., J. of Metals, no.6, 1950, 862).

SHAROV, M.V., prof.; GUROVA, L.M., inzh.

Effect of iron on the structure and mechanical properties of Al-Si-Mg alloys. Trudy MATI no.56:5-18 '63. (MIRA 16:6)

(Aluminum-silicon-magnesium alloys--Metallography)
(Phase rule and equilibrium)
(Aluminum founding)

SHAROV, M.V.; NIKISHAYEVA, O.I.

Degassing aluminum alloys by hexachloroethane. Alium. splavy no.1:129-138 '63. (MIRA 16:11)

DRITS, M.Ye., doktor tekhn. nauk, otv. red.; BOCHVAR, A.A., akademik, red.; BELOV, A.F., doktor tekhn. nauk, red.; DOBATKIN, V.I., doktor tekhn. nauk, red.; MAL'TSEV, M.V., doktor tekhn. nauk, red.; FRIDLYANDER, I.N., doktor tekhn. nauk, red.; SVIDERSKAYA, Z.A., kand. tekhn. nauk, red.; YELAGIN, V.I., kand. tekhn. nauk, red.; BARBANEL', R.I., kand. tekhn. nauk, red.; SHAROV, N.V., kand. tekhn. nauk, red.; KADANER, E.S., kand. tekhn.nauk, red.; TROKHOVA, V.F., red.; CHERNOV, A.N., red.

[Metallography of light alloys] Metallovedenie legkikh splavov. Moskva, Nauka, 1965. 226 p. (MIRA 18:10)

1. Moscow. Institut metallurgii.

L 42669-66 EWT(m)/EWP(e)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/GD/JH

ACC NR: AT6016406 (A) SOURCE CODE: UR/0000/65/000/000/0006/0018

AUTHOR: Sharov, M. V.

47
B+1

ORG: none

27

TITLE: Control of gas porosity in aluminum alloys

SOURCE: AN SSSR. Institut metallurgii. Metallovedeniye legkikh splavov (Metallography of light alloys). Moscow, Izd-vo Nauka, 1965, 6-18

TOPIC TAGS: aluminum alloy, hydrogen, metal oxidation, metal test

ABSTRACT: Various methods employed in the aluminum and light-alloys industry for the prevention of metal porosity are classified. No new experimental material is presented. The author classifies the various methods into three main categories: 1) preventive measures, 2) methods based on removal of hydrogen from liquid alloys, and 3) methods in which the formation of gas bubbles is prevented without a preliminary removal of hydrogen. The author asserts that all currently employed degassing methods by the light-alloys industry fall in one of the above mentioned classes. He supports his conclusions with a number of pertinent graphs and tables derived from the literature. Orig. art. has: 2 tables, 5 graphs, and 4 equations.

SUB CODE: 11/ SUBM DATE: 16Sep65/ ORIG REF: 011

Card 1/1 BLG

L 29083-66 EWP(j)/EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) RM/JD

ACC NR: AT6011848 (N) SOURCE CODE: UR/2536/65/000/063/0045/0061

AUTHORS: Nikishayeva, O. I. (Candidate of technical sciences); Sharov, M. V. (Professor); Fadeyeva, G. S. (Engineer)

ORG: Moscow Aviation Technology Institute (Moskovskiy aviatsionnyy tekhnologicheskiy institut)

TITLE: Coatings for surfaces of casting molds for aluminum-silicon alloys

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 63, 1965. Proizvodstvo otlivok iz legkikh splavov (Production of castings from light alloys), 45-61

TOPIC TAGS: aluminum alloy, silicon alloy, metal casting/ AL2 aluminum alloy, AL9 aluminum alloy

ABSTRACT: The effect of coating the surfaces of casting molds with carbon black, hexachloroethane, and hexachlorobenzene on the properties of the melt and the quality of aluminum-silicon castings was investigated. The results supplement the investigations of G. F. Balandin, Yu. A. Stepanov, et al (Liteynoye proizvodstvo, 1961, No. 8). The experiments were carried out on alloys AL2 and AL9, with the chlorinated hydrocarbons being applied to the surfaces with an atomizer in the form of a 20% acetone solution. The carbon black was deposited with an acetylene gas burner. The experimental procedure followed is described by M. V. Sharov and O. I. Nikishayeva (Trudy

Card 1/2 UDC: 669.716:001.5

MATI, vyp. 43, Oborongiz, 1961), and the experimental results are summarized in graphs and tables (see Fig. 1).

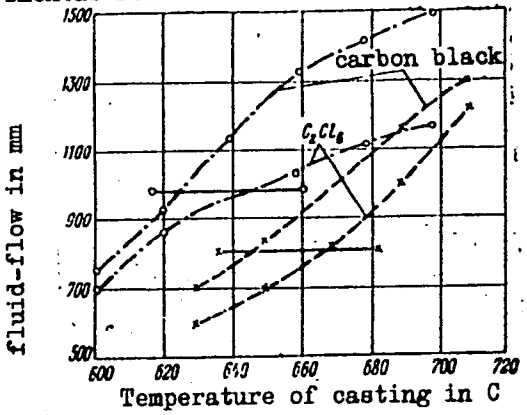

Fig. 1. Influence of the temperature of melt on the fluid-flow of AL2 and AL9 alloys when cast into a mold coated with carbon black and hexachloroethane. Open circle, dash, dot, dash, open circle - alloy AL2; cross, dash, dash, dash, cross - alloy AL9; open circle, dash, open circle - no coating, cast temperature 700C; cross, dash, dash, dash, no coating, cast temperature 710C.

The use of carbon black or hexachloroethane coatings considerably improves the degree of mold filling, permits lowering of the casting temperature, increases the density of castings, and prevents the formation of hot cracks in the castings. Coating of molds with hexachlorobenzene had little or no effect either on the properties of the alloy melt or the quality of the castings. P. F. Odinyy participated in the experimental work. Orig. art. has: 12 tables and 2 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 004

L 29682-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JH/JD
ACC NR: AT6011849 (N) SOURCE CODE: UR/2536/65/000/063/0062/0085

AUTHORS: Golubenko, R. A. (Engineer); Sharov, M. V. (Professor) 43 B+1

ORG: Moscow Aviation Technology Institute (Moskovskiy aviatsionnyy tekhnologicheskiy institut)

TITLE: Foundry heads with exothermic heating for aluminum alloy casts 27

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 63, 1965. Proizvodstvo otlivok iz legkikh splavov (Production of castings from light alloys), 62-85

TOPIC TAGS: metal property, metal crystallization, aluminum, aluminum alloy, metal casting/ AL2 aluminum alloy, AL4 aluminum alloy, AL9 aluminum alloy

ABSTRACT: The optimum composition of mixtures for exothermic foundry head sleeves used in casting aluminum alloys AL2, AL4, and AL9 was determined. The mechanical and metallographic properties of castings obtained with and without the use of exothermic sleeves were compared, and the results of comparisons are tabulated. Photographs of castings obtained with and without the use of exothermic sleeves are presented (see Fig. 1). A schematic of the experimental installation is presented. The heat accumulation coefficient of a given exothermic mixture was determined after M. N. Galkin

$$b_{obr}=\frac{60}{10^3}\frac{\frac{\pi}{4}+1}{2\sqrt{\pi}}\frac{x\gamma_{sm}Q_{sm}}{\vartheta_{kr}\sqrt{\tau_{kr}}}-\left[\frac{x}{r}\left(\frac{1}{\pi}+0{,}5\right)+\frac{2}{\pi}-0{,}5\right]b'_{\varphi}$$

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UDC: 669.716:001.5

$$-\frac{G_T \cdot 60 \cdot 10^6}{4\sqrt{\pi}} \frac{c_T + \frac{\gamma_m}{\gamma_T} \cdot \frac{Q_m}{\vartheta_{kr}}}{r^2} \frac{1}{\sqrt{\tau_{kr}}},$$

where b_{obr} is the heat accumulation coefficient, r is the radius of the lower part of the specimen, γ is thickness of casting, G_T and γ_T are the weight and specific weight of the porcelain insulation of the thermocouple that is immersed in the metal, c_T is the specific heat of porcelain, γ_m and ρ_m are the specific heat and latent heat of crystallization of metal casting, τ_{kr} is the crystallization time of the metal, $\vartheta_{kr} = (t_{kr} - t_\varphi)$ where t_{kr} is the crystallization temperature of the metal and t_φ and b_φ are the initial temperature and coefficient of heat accumulation of the mold material.

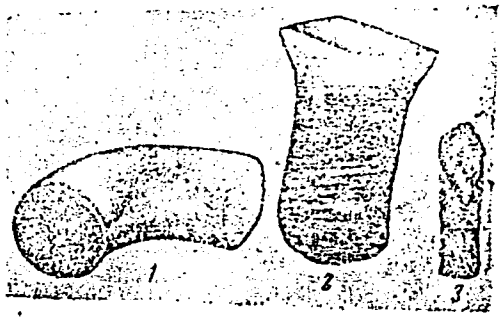

Fig. 1. Casting of alloy AL2 without and with the use of heated heads. 1 - casting, 2 - nonheated head, 3 - heated head.

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ACC NR: AT6011849

The best results are obtained with exothermic sleeves having the following composition: Al-Mg alloy (50:50) 15%, manganese ore 40%, wood shavings 5%, refractory clay 35%, clay 5%, and binder, 6% above the total of 100%. It is concluded that the use of exothermic sleeves results in a saving of 50 to 60% of the liquid metal during casting operations. Orig. art. has: 8 tables, 13 figures, and 1 equation.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 005

Card 3/3

VEYS, D.A.; KOKHTEV, A.A.; LELYANOV, V.A.; MALYNICH, V.I.; POVOLOTSKIY, L.I.; RASKATOV, V.M., inzhener; TOPORNIN, G.S.[deceased]; LAPUSHKIN, A.D., dotsent, retsenzent; USPASSKIY, P.P., professor, retsenzent; ARKHANGEL'SKIY, V.M., kandidat tekhnicheskikh nauk, retsenzent; REGIHER, Z. L., kandidat tekhnicheskikh nauk, retsenzent; SHAROV, M.Ya., kandidat tekhnicheskikh nauk, retsenzent; YUR'YEV, M.G., inzhener, retsenzent; LYUTIKOV, A.F., redaktor; MODEL', B.I., tekhnicheskiy redaktor.

[Manual on materials for the construction of locomotives and railroad cars] Spravochnik po materialam dlia lokomotivo- i vagonostroeniia. Pod obshchei red. V.M. Raskatova. Moskva, Gos. nauchno-tekhn. izd-vo machino-stroit. lit-ry, 1956. 481 p.
(Locomotives--Construction) (Railroads--Cars--Construction)

AVRASIN, Ya.D., kandidat tekhnicheskikh nauk; BERG, P.P., professor, doktor tekhnicheskikh nauk, BERNSHTEYN, M.L., kandidat tekhnicheskikh nauk; GENEROZOV, P.A., starshiy nauchnyy sotrudnik; GLINER, B.M., inzhener; DAVIDOVSKAYA, Ye.A., kandidat tekhnicheskikh nauk; YELCHIN, P.M., inzhener; YERMIN, N.I., kandidat fiziko-matematicheskikh nauk; IVANOV, D.P., kandidat tekhnicheskikh nauk; KNOROZ, L.I., inzhener; KOBRIN, M.M., kandidat tekhnicheskikh nauk; KORITSKIY, V.G., dotsent; KROTKOV, D.V., inzhener; KUDRYAVTSEV, I.V., professor, doktor tekhnicheskikh nauk; KULIKOV, I.V., kandidat tekhnicheskikh nauk; LEPETOV, V.A., kandidat tekhnicheskikh nauk; LIKINA, A.F., inzhener; MATVEYEV, A.S., kandidat tekhnicheskikh nauk; MIL'MAN, B.S., kandidat tekhnicheskikh nauk; PAVLUSHKIN, N.M., kandidat tekhnicheskikh nauk; PTITSYN, V.I., inzhener [deceased]; RAKOVSKIY, V.S., kandidat tekhnicheskikh nauk, RAKHSHTADT, A.G., kandidat tekhnicheskikh nauk; RYABCHENKOV, A.V., professor, doktor khimicheskikh nauk; SIGOLAYEV, S.Ya., kandidat tekhnicheskikh nauk; SMIRYAGIN, A.P., kandidat tekhnicheskikh nauk, SUL'KIN, A.G., inzhener; TUTOV, I.Ye., kandidat tekhnicheskikh nauk, KHRUSHCHOV, M.M., professor, doktor tekhnicheskikh nauk; TSYPIN, I.O., kandidat tekhnicheskikh nauk; SHAROV, M.Ya., inzhener; SHERMAN, Ya.I., dotsent; SHMELEV, B.A., kandidat tekhnicheskikh nauk; YUGANOVA, S.A., kandidat fiziko-matematicheskikh nauk; SATEL', E.A., doktor tekhnicheskikh nauk, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Machine builder's reference book] Spravochnik mashinostroitelia; v shesti tomakh. izd-vo mashinostroit. lit-ry. Vol.6. (Glav. red.toma E.A.Satel'. Izd. 2-oe, ispr. i dop.) 1956. 500 p. (MLRA 9:8)
(Machinery--Construction)

SHAROV, M.Ya., DENKER, I.I.; KALININA, Ye.P.

Conversion of the resin BMK-5 into a steric (three-dimensional) polymer. Lakokras.mat.i ikh prim. no.5:25-27 '60. (MIRA 13:11)
(Resins, Synthetic) (Polymers)

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37775
S/661/61/000/006/068/081
D247/D302

15.8170

AUTHORS: Konstantinova, N. G., Zhdanov, A. A., Andrianov, K. A., Sharov, M. Ya., Kyutner, M. A. and Zakharov, A. A.

TITLE: Thermostable lacquer coatings based on silico-organic polymers

SOURCE: Khimiya i prakticheskoye primeneniye kremneorganicheskikh soyedineniy: trudy konferentsii, no. 6: Doklady, diskussii, resheniye. II Vses. konfer. po khimii i prakt. prim. kremneorg. soyed., Len. 1958. Leningrad, Izd-vo AN SSSR, 1961, 296-299

TEXT: A study was made of the thermostability of several lacquer-painted materials on the basis of different film-forming substances. The silico-organic resin K-47 was modified by the use of organic polymers to give a hard, cold-drying coat of increased thermostability. The metallic surface and its preparation was found to have a great influence on the adhesion, the protective properties and the thermostability of the coatings. In the discussion, the

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Thermostable lacquer coatings ... S/661/61/000/006/068/081
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registration and technical specifications of some of the silico-organic varnishes are given. Elasticity and hardness data are also given. Coatings withstanding radioactive irradiation are mentioned. Comparison of the properties of silico-organic and other enamels are made, and methods of preparing surfaces before application of the enamels are mentioned. The best thermostability recorded was for a duration of 150 hours at 500°C. A discussion followed in which P. A. Filippov (Leningrad) took part.

X

Card 2/2

TROSTYANSKAYA, Ye.B.; SHISHKIN, V.A.; SIL'VESTROVICH, S.I.; PANTELEYEV, A.S.; POLUBOYARINOV, D.N.; BALKEVHICH, V.L.; NATANSON, A.K.; KOLACHEV, B.A.; PETROV, D.A.; GOL'DBERG, M.M.; SHAROV, M.Ya., inzh., retsenzent; KITAYGORODSKIY, I.I., doktor tekhn. nauk, prof., retsenzent; LIVANOV, V.A., kand. tekhn. nauk, prof., retsenzent; TROSTYANSKAYA, Ye.B., red.; BABUSHKINA, S., ved. red.; TITSKAYA, B.F., ved. red.; VORONOVA, V.V., tekhn. red.

[New kinds of materials in engineering and industry]Novye materialy v tekhnike. Pod red. Trostianskoi E.B., Kolacheva, B.A., Sil'vestrovicha S.I. Moskva, Gostoptekhizdat, 1962. 656 p. (MIRA 16:2)

(Materials)

SHAROV, N., inzh.

ALM-17 automatically controlled power ladder. Pozh. delo 7 no. 1:23 Ja '60. (MIRA 14:2)
(Fire departments--Equipment and supplies)

BRYKSIN, A., inzhener-polkovnik, letchik vtorogo klassa; SHAROV, N., inzhener-podpolkovnik, letchik vtorogo klassa; LYSENKO, S., inzhener-podpolkovnik

Transport airplane in take-off and landing. Vest. Vozd. Fl. no.12:69-71 D '61. (MIRA 15:3)
(Airplanes--Take-off) (Airplanes--Landing)

SHAROV, N., inzh.

Higher efficiency, better quality. Pozh.delo 7 no.5:27 My '61.
(MIRA 14:5)

(Pumping machinery)

SHAROV, N.A.

SHAROV, N.A., inzhener; GUREVICH, G.Ye., inzhener.

Pavilion of the Kazakh SSR at the All-Union Agricultural Exhibition. Gidr. i mel. 6 no.8:30-34 Ag '54. (MLRA 7:9)
(Kazakhstan--Water resources development) (Moscow--Agricultural exhibitions)

BOLOTOVA, N.P.; VINOKUR, Ya.Ye.; GIRSHKAN, S.A.; KOKLYANOV, A.F.; KUNDZICH, M.M.; NEFEDOV, V.D.; OFFENGENDEN, S.R.; PISHCHIKOV, R.S.; POSLAVSKIY, V.V.; TOMILOV, V.S.; SHAROV, N.A.; SHTAREV, Ya.K.; SHUBLADZE, K.K.

Ways of improving technical aspects and lowering the cost of constructing irrigation, drainage and water supply systems. Gidr. i mel. 10 no.4:17-39 Ap '58. (MIRA 11:5)
(Irrigation) (Drainage) (Water supply, Rural)

14(10) SOV/99-59-6-13/13

AUTHOR: Sharov, N.A., Engineer

TITLE: Conference on Problems of Crop Irrigation Mechanization in the USSR

PERIODICAL: Gidrotekhnika i melioratsiya, 1959, Nr 6, pp 61-64, (USSR)

ABSTRACT: The article describes the Conference on Problems of Crops Irrigation Mechanization in the USSR called by the Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii sel'skogo khozyaystva (All-Union Research Institute of Agriculture Mechanization) and held in Moscow from March 18 to 21. 1959. The conference was dedicated to problems of sprinkling. The following organizations were represented in it: research institutes, water economy corporations, institutions of higher learning, special design offices, planning organizations, industrial enterprises from the Uzbek, Ukrainian, Azerbaydzhan,

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Conference on Problems of Crop Irrigation Mechanization in the USSR

Georgian, Kirgiz, Kazakh, Turkmen, and the Moldavian SSR, the RSFSR, as well as the Gosudarstvennyy Nauchno-tekhnicheskiy komitet pri Sovete Ministrov SSSR (State Scientific and Technical Committee Attached to the Ministers Council of the USSR), the Giprovodkhoz, and the Ministerstvo sel'skogo khozyaystva SSSR (Ministry of Agriculture of the USSR). In all, the conference was attended by more than 100 specialists and representatives of at least 53 organizations. The conference had its past developments summed up and made several decisions to promote irrigation mechanization. The following reports were delivered there: A.V. Krasnichenko, Director of the VISKhOM, made an introductory speech; G.P. Nechetov, Senior Engineer of the Upravleniye novoy tekhniki i ispytaniya mashin MSKh SSSR (New Equipment and Machinery

Conference on Problems of Crop Irrigation Mechanization in the USSR

Testing Administration of the MSKh USSR), lectured on "Present-Day Condition and Work Outlook for the Creation of New Sprinklers"; Candidate of Technical Sciences B.M. Lebedev, VISKhOM, - on his institute's laboratory work; Candidate of Technical Sciences S.Kh.Guseyn-Zade, Representative of the AzNIIGiM, - on sprinkling in the Azerbaydzhan SSR; Candidate of Technical Sciences V.I. Kal'nitskiy, GruzNIIGiM, - on sprinkling in the Georgian SSR; N.I. Rychkov, Manager of the Irrigation Engineering Section of the Moskovskaya opytno-issledovatel'skaya dozhdeval'naya stantsiya (Moscow Station for Testing and Sprinkling Research), - on sprinkling in the Moskovskaya Oblast'; V.I. Bogdanovich, Senior Scientific Worker of the UkrNIIGiM, - on sprinkling in the Ukraine; V.F. Vitte, Senior Scientific Worker

Conference on Problems of Crop Irrigation Mechanization in the USSR

and Representative of the YuzhNIIGiM, - on sprinkling mechanization; A.N. Koryagin, Scientific Worker of the Institut sel'skogo khozyaystva imeni Dokuchayeva (Institute of Africulture imeni Dokuchayev), -on a mobile sprinkling system in the Central Chernozem Zone; D.I. Sazonov, Chief Agronomist of the Magnitogorskiy molochno-ovoshchnyy sovkhoz (Magnitogorsk Milk and Vegetable-Growing Sovkhoz), - on on sprinkling vegetables and potatoes in Southern Ural; Engineer-Hydrotechnician F.N. Yur'yev - on sprinkling cotton at the Sovkhoz "Pakhta-Aral", with an expedition of the SANIIRI doing appraisal work.

ASSOCIATION: Glavodkhoz MSKh SSSR

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USCOMM-DC-61,002

SHAROV, N.A., inzh.

Recent developments in irrigation; seminar on irrigation problems.
Gidr. i mel. 13 no.12:58-60 D '61. (MIRA 14:12)
(Irrigation)

SHARGV, N.A.; MITROFANOV, V.S.

Study of the local irritating action of trimecaine, a new Rossian anesthetic. Trudy SMI 15:247-251 '60 (MIRA 17:7)

1. Iz kliniki gospital'noy khirurgii (zav. - prof. A.N. Kartavenko) i laboratorii obshchey farmakologii (zav. - prof. G.A. Ionomarev [deceased]) instituta farmakologii i khimioterapii AMN SSSR.

SHAROV, N.A.

Comparative toxicity of trimecaine and novocaine administered by different methods. Farm. i toks. 25 no.6:731-732 N-D '62. (MIRA 17:8)

1. Laboratoriya obshchey farmakologii (zav. - prof. G.A. Ponomarev [deceased]) Instituta farmakologii i khimioterapii AMN SSSR i klinika gospital'noy khirurgii (zav. - prof. A.N. Kartavenko) Smolenskogo meditsinskogo instituta.

SHAROV, N.A.

Clinical and experimental evaluation of trimecaine, the new Russian preparation for local anesthesia. Trudy SMI 16:173-182 '63.
(MIRA 18:1)

1. Iz kafedry gospital'noy khirurgii Smolenskogo meditsinskogo instituta (zav. - prof. A.N.Kartavenko), IV otdeleniya instituta khirurgii imeni A.V.Vishnevskogo (zav. - prof. N.I.Krakovskiy) i laboratorii obshchey farmakologii instituta farmakologii i khimioterapii AMN SSSR (zav. - prof. G.A.Ponomarev [deceased]).

SHAROV, N.A., inzh.

Saturation irrigation as a basis of irrigation regimes; at the scientific and technological conference on the irrigation regime farm crops in the noncotton zone. Gidr. i mel. 15 no.11:54-62 '63. (MIRA 17:1)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. Lenina.

POPOV, M.Z., prof.; SHAROV, N.A.

Trimecaine in ophthalmic surgery. Trudy SMI 16:264-266 '63.
(MIRA 18:1)

1. Iz kafedry glaznykh bolezney (zav. - prof. M.Z.Popov) i kafedry gospital'noy khirurgii (zav. - prof. A.N.Kartavenko) Smolenskogo gosudarstvennogo meditsinskogo instituta.

KARTAVENKO, A.N., prof.; [illegible], N.I., prof.; SHAROV, N.A.

Clinical use of [illegible]. Sov. med. 28 no.9:86-89 S '65.
(MIRA 18:9)

1. Kafedra gospital'noy khirurgii (zav. - prof. A.N.Kartavenko) Smolenskogo meditsinskogo instituta i IV otdeleniye (zav. - prof. N.I.Krakovskiy) Instituta khirurgii imeni Vishnevskogo AMN SSSR, Moskva. 2. Chlen-korrespondent AMN SSSR (for Krakovskiy).

PRYANISHNIKOVA, N. T.; SHAROV, N. A.

Comparative studv of the activity of trimecaine and novocaine in infiltration anesthesia. Eksper. khir. i anest. no.2:83-86 '62. (MIRA 15:6)

1. Iz laboratorii obshchey farmakologii (zav. - prof. G. A. Ponomarev) Instituta farmakologii i khimioterapii AMN SSSR i kliniki gospital'noy khirurgii (zav. - prof. A. N. Kartavenko) Smolenskogo meditsinskogo instituta.

(NOVOCAINE) (ANESTHETICS)

SHAROV, N.A.; MITROFANOV, V.S.

Experimental data on the evaluation of a new anesthetic trimecaine. Eksper. khir. i anest. no.1:80-82'63. (MIRA 16:10)

1. Iz laboratorii obshchey farmakologii (zav. - prof. G.A. Ponomarev) Instituta farmakologii i khimioterapii AMN SSSR.
(ANESTHETICS)

GOROKHOV, A.M., putevoy rabochiy; BESEDOVSKIY, D.A.; TARASOV, A.I.; KRIVOBOK, G.K.; MOISEYENKO, A.D., inzh.-mekhanik; YUR'YAKS, P.I. [Jurjaks, P.]; IBRAGIMOV, A.A.; SAFRONOV, V.S.; SHAROV, N.N.

Letters to the editor. Put' i put.khoz. 7 no.4:40-42 '63.
(MIRA 16:3)

1. Stantsiya Talovaya, Yugo-Vostochnoy dorogi (for Gorokhov). 2. Nachal'nik distantsii zashchitnykh lesonasazhdeniy, stantsiya Atkarsk, Privolzhskoy dorogi (for Besedovskiy). 3. Nachal'nik putevoy mashinnoy stantsii, stantsiya L'gov, Moskovskby dorogi (for Tarasov). 4. Sekretar' partiynoy organizatsii stantsii Nikitovka, , Donetskoy dorogi (for Krivobok). 5. Stantsiya Nikitovka, Donetskoy dorogi (for Moiseyenko). 6. Brigadir puti, stantsiya Platone, Pribaltiyskoy dorogi (for Yur'yaks). 7. Zamestitel' nachal'nika distantsii, Sal'yany, Zakavkazskoy dorogi(for Ibragimov). 8. Starshiy normirovshchik, stantsiya Rtishchevo, Privolzhskoy dorogi (for Safronov). 9. Sekretar' partiynoy organizatsii, stantsiya Rtishchevo, Privolzhskoy dorogi (for Sharov).

(Railroads—Maintenance and repair)

SHAROV, N.V.; SHAKHET, G.P.; RAMENOV, A.S.; KUKHAREV, P.P.; KLOCHKOV, S.A., retsenzent; MARTYNOV, S.F., retsenzent; OSIPOV, Ya.I., retsenzent.

[Machinery and apparatus for the fur industry] Mashiny i apparaty mekhovogo proizvodstva. Pod obshchei red. N.V.Sharova. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva promyshlennykh tovarov shirokogo potrebleniia SSSR, 1953. 358 p. (MLRA 7:6)
(Fur industry)

SHAKHET, Grigoriy Pinkhusovich; KLYAGINA, M.I., red.; SHAROV, M.V., red.; MINAYEVA, T.M., red.; MEDVEDEV, L.Ya., tekhn.red.

[Handbook on the fur and sheepskin industry] Spravochnik po mekhovoi i ovchinno-shubnoi promyshlennosti. Vol.3. [Equipment] Oborudovanie. 1959. 367 p. (MIRA 12:12)
(Hides and skins--Handbooks, manuals, etc.)

SHAROV, N.M.

Mounted disk harrow. Trakt. i sel'khozmash. 31 no.7:29 Jl '61. (MIRA 14:6)

1. TSentral'naya mashinoispytatel'naya stantsiya.
(Harrows)